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| **PROPOSED ACTION:** | Issuance of an Incidental Harassment Authorization to UniSea, Inc., to Take Marine Mammals by Harassment Incidental to Construction Activities on Unalaska Island, Alaska, March 2016 – February 2017. |
| **TYPE OF STATEMENT:** | Environmental Assessment |
| **LEAD AGENCY:** | U.S. Department of Commerce<br>National Oceanic and Atmospheric Administration<br>National Marine Fisheries Service |
| **RESPONSIBLE OFFICIAL:** | Donna S. Wieting, Director<br>Office of Protected Resources,<br>National Marine Fisheries Service |
| **FOR FURTHER INFORMATION:** | Jordan Carduner<br>National Marine Fisheries Service<br>Office of Protected Resources<br>Permits and Conservation Division<br>1315 East West Highway<br>Silver Spring, MD 20910<br>301-427-8401 |
| **LOCATION:** | An island within eastern Aleutian Islands archipelago in the northeast Pacific Ocean. |
| **ABSTRACT:** | This Environmental Assessment analyzes the environmental impacts of the National Marine Fisheries Service, Office of Protected Resources proposal to issue an Incidental Harassment Authorization to UniSea, Inc., for the taking, by Level B harassment, of marine mammals, incidental to proposed construction activities on Unalaska Island, Alaska, March, 2016-February, 2017. |
| **DATE:** | February 2016 |

## CONTENTS

**List of Abbreviations or Acronyms** ..... ii

**Chapter 1 – Introduction and Purpose and Need** ..... 1

1.1 Description of Proposed Action ..... 1
1.1.1 Background on UniSea's MMPA Application ..... 2
1.1.2 Marine Mammals in the Action Area ..... 2
1.2 Purpose and Need ..... 2
1.3 The Environmental Review Process ..... 3
1.3.1 Laws, Regulations, or Other NEPA Analyses Influencing the EA's Scope ..... 3
1.3.2 Scope of Environmental Analysis ..... 4
1.3.3 NEPA Public Scoping Summary ..... 6
1.3.4 Relevant Comments on our *Federal Register* Notice ..... 6
1.4 Other Permits, Licenses, or Consultation Requirements ..... 7
1.4.1 Endangered Species Act ..... 7
1.4.2 Marine Mammal Protection Act ..... 8

**Chapter 2 – Alternatives** ..... 8

2.1 Introduction ..... 8
2.2 Description of UniSea's Proposed Activities ..... 8
2.2.1 Specified Time and Specified Area ..... 8
2.2.2 Construction Activities ..... 8
2.2.2.1 Removal of Existing Dock Structure ..... 9
2.2.2.2 Installation of New Piles and Sheet Piles ..... 9
2.3 Description of Alternatives ..... 10
2.3.1 Alternative 1 – Issuance of an Authorization with Mitigation Measures ..... 10
2.3.2 Alternative 2 – No Action Alternative ..... 16

**CHAPTER 3 – AFFECTED ENVIRONMENT** ..... 16

3.1 Physical Environment ..... 16
3.1.1 Marine Mammal Habitat ..... 17
3.2 Biological Environment ..... 17
3.2.1 Marine Mammals ..... 17

**CHAPTER 4 – ENVIRONMENTAL CONSEQUENCES** ..... 20

4.1 Effects of Alternative 1 – Issuance of an Authorization with Mitigation Measures ..... 20
4.1.1 Impacts to Marine Mammal Habitat ..... 20
4.1.2 Impacts to Marine Mammals ..... 21
4.1.3 Impacts to Subsistence Uses ..... 23
4.2 Effects of Alternative 2– No Action Alternative ..... 24
4.2.1 Impacts to Marine Mammal Habitat ..... 24
4.2.2 Impacts to Marine Mammals ..... 24
4.2.3 Impacts to Subsistence Uses ..... 25
4.3 Compliance with Necessary Laws – Necessary Federal Permits ..... 25
4.4 Unavoidable Adverse Impacts ..... 25
4.5 Cumulative Effects ..... 25
4.5.1 Coastal Development ..... 26
4.5.2 Fisheries Interactions ..... 27
4.5.3 Vessel Traffic ..... 27
4.5.4 Marine Pollution ..... 28
4.5.5 Climate Change ..... 28
4.5.6 Summary of Cumulative Effects ..... 28

**CHAPTER 5 – LIST OF PREPARERS AND AGENCIES CONSULTED** ..... 30

**REFERENCES** ..... 31

## LIST OF TABLES

**Table 1** Marine mammals that could potentially experience Level B harassment as a result of the proposed project…… **2**
**Table 2** Components of the human environment not affected by our issuance of an Authorization…… **5**
**Table 3** Modeled Level A and Level B harassment zones associated with the proposed project…….. **111**
**Table 4** Estimated take of marine mammals as a result of the proposed project…… **232**

## LIST OF FIGURES

**Figure 1** The area expected to be ensonified up to Level B harassment threshold during vibratory driving……. **12**
**Figure 2** The area expected to be ensonified up to the Level B harassment threshold during impact driving……... **13**

## LIST OF ABBREVIATIONS OR ACRONYMS

| | |
|---|---|
| ANCSA | Alaska Native Claims Settlement Act |
| Authorization | Incidental Harassment Authorization |
| BiOp | Biological Opinion |
| CFR | Code of Federal Regulations |
| cm | centimeters |
| Commission | Marine Mammal Commission |
| dB | decibel |
| DPS | distinct population segment |
| EA | Environmental Assessment |
| ESA | Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq*.) |
| FONSI | Finding of No Significant Impact |
| FR | *Federal Register* |
| ft | feet |
| GOA | Gulf of Alaska |
| IHA | Incidental Harassment Authorization |
| ITA | Incidental Take Authorization |
| ITS | Incidental Take Statement |
| kg | kilogram |
| km | kilometer |
| m | meter |
| mi | mile |
| MMPA | Marine Mammal Protection Act of 1972, as amended (16 U.S.C. 1631 *et seq*.) |
| µPa | micropascal |
| NAO | NOAA Administrative Order |
| NEPA | National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et seq*.) |
| NMFS | National Marine Fisheries Service |
| NOAA | National Oceanographic and Atmospheric Administration |

# CHAPTER 1 – INTRODUCTION AND PURPOSE AND NEED

## 1.1 DESCRIPTION OF PROPOSED ACTION

The Marine Mammal Protection Act of 1972, as amended (MMPA; 16 U.S.C. 1631 *et seq*.) generally prohibits the incidental taking of marine mammals. The MMPA defines take as "…to harass, hunt, capture, or kill, or attempt to harass, hunt, capture or kill any marine mammal..."; and further defines harassment as any act of pursuit, torment, or annoyance which: (1) has the potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment); or (2) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B harassment).

There are exceptions, however, to the MMPA's prohibition on take. The National Marine Fisheries Service, Office of Protected Resources (NMFS, hereinafter, we) may authorize the incidental but not intentional taking of marine mammals by harassment upon the request of a U.S. citizen provided NMFS follows certain statutory and regulatory procedures and make determinations. We discuss this exception in more detail in section 1.2.

UniSea, Inc. (UniSea) has requested an Incidental Harassment Authorization (Authorization) to take marine mammals, by harassment incidental to a dock construction project at a commercial fish processing facility. In response to UniSea's request, NMFS proposes to issue an Incidental Harassment Authorization (Authorization) to UniSea under Section 101(a)(5)(D) of the MMPA, which would allow the agency to take marine mammals, incidental to the dock construction project, March 1, 2016- February 28, 2017. NMFS does not have the authority to permit, authorize, or prohibit UniSea's construction activities under Section 101(a)(5)(D) of the MMPA, as that authority lies with the U.S. Army Corps of Engineers.

NMFS' proposed issuance of an Authorization to UniSea is a major federal action under the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. 4321 *et seq*.), the Council on Environmental Quality (CEQ) regulations in 40 CFR §§ 1500-1508, and NOAA Administrative Order (NAO) 216-6. Thus, NMFS is required to analyze the effects of our proposed action on the human environment. This Environmental Assessment (EA), titled *Issuance of an Incidental Harassment Authorization to UniSea, Inc., to Take Marine Mammals by Harassment Incidental to Construction Activities on Unalaska Island, Alaska, March 2016 – February 2017,* addresses the potential environmental impacts of the following choices available to us under section 101(a)(5)(D) of the MMPA, namely:

- Issue the proposed Authorization[1] to UniSea for take, by Level B harassment, of marine mammals during the proposed construction activities, taking into account the prescribed means of take, mitigation measures, and monitoring requirements;
- Do not issue the proposed Authorization to UniSea, in which case, for the purposes of NEPA analysis only, we assume that the activities would proceed without the mitigation and monitoring measures that would otherwise be prescribed in a proposed Authorization[2].

[1] NMFS may issue an Authorization if, after NMFS provides a notice of a proposed authorization to the public for review and comment: (1) NMFS makes certain findings; and (2) the taking is limited to harassment.
[2] NMFS would not issue an Authorization if it cannot make certain findings.

### 1.1.1 BACKGROUND ON UNISEA'S MMPA APPLICATION

UniSea proposes to remove a commercial fishing dock in Iliuliuk Harbor, Unalaska, and to construct a new dock in its place. The project entails impact pile driving, vibratory pile driving, vibratory pile removal, and down-the-hole drilling. The construction may temporarily disturb Steller sea lions (*Eumetopias jubatus*) and harbor seals (*Phoca vitulina)* within and around the harbor. UniSea proposes to complete the dock construction activities over 180 days during the period March 1, 2016 through February 28, 2017.

The following aspects of the proposed activity would likely result in the take of marine mammals: noise generated by impact pile driving, vibratory pile driving, vibratory pile removal, and down-the-hole drilling. We describe UniSea's construction activities in more detail in section 2.2.

### 1.1.2 MARINE MAMMALS IN THE ACTION AREA

There are three marine mammal species with confirmed occurrence in the action area: Steller sea lions (*Eumetopias jubatus*), harbor seals (*Phoca vitulina)*, and humpback whales (*Megaptera novaeangliae*). Of these species, Steller sea lions (*Eumetopias jubatus*) and harbor seals (*Phoca vitulina)* could experience Level B harassment incidental to UniSea's dock construction activities. Humpback whales are very rarely observed in the project location and are not likely to experience Level A or Level B harassment related to the project.

**Table 1: General information on marine mammals that could potentially experience Level B harassment as a result of the proposed dock construction in Iliuliuk Harbor, Unalaska, March 2016 through February 2017.**

| Species | Stock Name | Regulatory Status[1, 2] | Stock/Species Abundance[3] | Occurrence and Range | Season |
|---|---|---|---|---|---|
| Steller sea lion (*Eumetopias jubatus*) | Western U.S. | MMPA – D ESA - E | 55,422 | common | year-round |
| Harbor seal (*Phoca vitulina*) | Aleutian Islands | MMPA – NC ESA - NL | 3,579 | occasional | year-round |

[1] MMPA: D = Depleted, S = Strategic, NC = Not Classified.
[2] ESA: E = Endangered, T = Threatened, NL = Not listed.
[3] 2014 NMFS Stock Assessment Report (Allen and Angliss, 2015).

## 1.2 PURPOSE AND NEED

The MMPA prohibits "takes" of marine mammals with only a few specific exceptions. The applicable exception in this case is an authorization for incidental take of marine mammals in section 101(a)(5)(D) of the MMPA.

Section 101(a)(5)(D) of the MMPA directs the Secretary of Commerce (Secretary) to authorize, upon request, the incidental, but not intentional, taking of small numbers of marine mammals of a species or population stock, by United States citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if, after NMFS provides a notice of a proposed authorization to the public for review and comment: (1) NMFS makes certain findings; and (2) the taking is limited to harassment.

We have issued regulations to implement the Incidental Take Authorization provisions of the MMPA (50 CFR § 216) and have produced Office of Management and Budget (OMB)-approved application instructions (OMB Number 0648-0151) that prescribe the procedures necessary to apply for authorizations. All applicants must comply with the regulations at 50 CFR § 216.104 and submit applications requesting incidental take according to the provisions of the MMPA.

**Purpose:** The primary purpose of NMFS' proposed action is to authorize the take of marine mammals incidental to UniSea's proposed dock construction activities. The Authorization would exempt UniSea from the take prohibitions contained in the MMPA.

To authorize the take of marine mammals incidental to a specified activity under the MMPA, NMFS must evaluate the best available information to determine whether the take would have a negligible impact on marine mammal species or stocks and have an unmitigable impact on the availability of affected marine mammal species for certain subsistence uses.

In addition, NMFS must prescribe, where applicable, the permissible methods of taking and other means of effecting the least practicable adverse impact on the species or stocks of marine mammals and their habitat (*i.e.*, mitigation), paying particular attention to rookeries, mating grounds, and other areas of similar significance.

If appropriate and where relevant, NMFS must also prescribe the means of effecting the least practicable impact on the availability of the species or stocks of marine mammals for subsistence uses. Authorizations must also include requirements or conditions pertaining to the monitoring and reporting of such taking.

**Need:** UniSea submitted an adequate and complete application on December 2, 2015, demonstrating both the need and potential eligibility for issuance of an Authorization in connection with the activities described in section 1.1.1. NMFS now has a corresponding duty to determine whether and how we can authorize take by Level B harassment incidental to the activities described in UniSea's application (UniSea 2015a). NMFS' responsibilities under section 101(a)(5)(D) of the MMPA and its implementing regulations establish and frame the need for this proposed action.

## 1.3 THE ENVIRONMENTAL REVIEW PROCESS

NEPA compliance is necessary for all major federal actions with the potential to significantly affect the quality of the human environment. Major federal actions include activities fully or partially funded, regulated, conducted, authorized, or approved by a federal agency. Because our issuance of an Authorization would allow for the taking of marine mammals consistent with provisions under the MMPA, NMFS considers this as a major federal action subject to NEPA.

Under the requirements of the National Oceanic Atmospheric Administration Administrative Order (NAO) 216-6 section 6.03(f)(2)(b) for incidental harassment authorizations, NMFS prepared this EA to determine whether the direct, indirect and cumulative impacts related to the proposed issuance of an Authorization for incidental take of marine mammals during the conduct of UniSea's proposed dock construction activities could be significant. If NMFS deems the potential impacts to be not significant, this analysis, in combination with other analyses incorporated by reference, may support the issuance of a Finding of No Significant Impact (FONSI) for the proposed Authorization.

### 1.3.1 LAWS, REGULATIONS, OR OTHER NEPA ANALYSES INFLUENCING THE EA'S SCOPE

NMFS has based the scope of the proposed action and nature of the two alternatives considered in this EA on the relevant requirements in section 101(a)(5)(D) of the MMPA and our related purpose and need. Thus, our authority under the MMPA bounds the scope of our alternatives. This analysis – combined with the analyses in the following documents – fully describes the

potential impacts associated with the proposed construction activities, including any required mitigation and monitoring measures for marine mammals.

After conducting a review of the information and analyses for sufficiency and adequacy, NMFS incorporates by reference the relevant analyses on UniSea's proposed dock construction activities as well as a discussion of the affected environment and environmental consequences within the following documents per 40 CFR 1502.21 and NAO 216-6 § 5.09(d):

- NMFS' notice of the proposed Authorization in the *Federal Register* (80 FR 79822, December 23, 2015) (NMFS 2015d);
- UniSea's *Request for an Incidental Harassment Authorization Under the Marine Mammal protection Act for the UniSea G1 Dock Replacement Project* (UniSea 2015a); and
- UniSea's *Marine Mammal Monitoring Plan for the UniSea G1 Dock Replacement Project (UniSea 2015b).*

**MMPA Application and Notice of the Proposed IHA**

The CEQ regulations (40 CFR § 1502.25) encourage federal agencies to integrate NEPA's environmental review process with other environmental review laws. NMFS relies substantially on the public process for developing proposed Authorizations and evaluating relevant environmental information and provide a meaningful opportunity for public participation as we develop corresponding EAs. We fully consider public comments received in response to our publication of the notice of proposed Authorization.

On December 23, 2015, NMFS published a notice of a proposed Authorization in the *Federal Register* (80 FR 79822, December 23, 2015) which included the following:

- A detailed description of UniSea's proposed dock construction activities and an assessment of the potential impacts on marine mammals and their habitat;
- Proposed mitigation and monitoring measures to avoid and minimize potential adverse impacts to affected marine mammal species or stocks and their habitat and proposed reporting requirements; and
- Our preliminary findings under the MMPA.

NMFS considered UniSea's proposed dock construction activities and associated mitigation and monitoring measures and preliminarily determined that the proposed construction of a commercial fishing dock would have a negligible impact on the affected species or stocks of marine mammals, resulting at worst in a modification in behavior and/or low-level physiological effects (Level B harassment). In addition, NMFS preliminarily determined that the activity would not have an unmitigable adverse impact on the availability of marine mammals for subsistence uses. The notice afforded the public a 30-day comment period on our proposed MMPA Authorization, including the proposed mitigation, monitoring, and reporting requirements.

### 1.3.2 Scope of Environmental Analysis

Given the limited scope of the decision for which NMFS is responsible, this EA intends to provide more focused information on the primary issues and impacts of environmental concern

related specifically to the proposed issuance of the Authorization for UniSea to construct a commercial fishing dock on Unalaska Island, an island within the eastern Aleutian Islands archipelago. This EA does not further evaluate effects to the elements of the human environment listed in Table 2 because previous environmental reviews for similar in-water construction projects have shown that the proposed dock replacement project would not significantly affect those components of the human environment. Moreover, those analyses are consistent with our analyses regarding non-significant impacts to marine mammals.

**Table 2: Components of the human environment not affected by our issuance of an Authorization**

| Biological | Physical | Socioeconomic / Cultural |
|---|---|---|
| Amphibians | Air Quality | Commercial Fishing |
| Humans | Essential Fish Habitat | Military Activities |
| Non-Indigenous Species | Geography | Oil and Gas Activities |
| Seabirds | Land Use | Recreational Fishing |
| | Oceanography | Shipping and Boating |
| | State Marine Protected Areas | Recreational Diving |
| | Federal Marine Protected Areas | National Historic Preservation Sites |
| | National Estuarine Research Reserves | National Trails and Nationwide Inventory of Rivers |
| | National Marine Sanctuaries | Low Income Populations |
| | Park Land | Minority Populations |
| | Prime Farmlands | Indigenous Cultural Resources |
| | Wetlands | Public Health and Safety |
| | Wild and Scenic Rivers | Historic and Cultural Resources |
| | Ecologically Critical Areas | |

However, previous environmental reviews for similar in-water construction activities, incorporated by reference, have shown that our limited action of issuing an Authorization would not affect components of the human environment listed in Table 1. They include:

- the *Environmental Assessment on the Issuance of an Incidental Harassment Authorization to Bergerson Construction, Inc., to Take Marine Mammals by Harassment Incidental to Construction of the Front Street Transload Facility in Newport, Oregon* (NMFS 2015b)
- the *Environmental Assessment on the Issuance of Marine Mammal Incidental Take Authorizations to the Washington State Department of Transportation to Take Marine Mammals by Harassment Incidental to Mukilteo Multimodal Project in Mukilteo, Washington* (NMFS 2014)
- the *Environmental Assessment on the Issuance an Incidental Harassment Authorization to the Alaska Department of Transportation and Public Facilities for the Take of Marine Mammals Incidental to a Kodiak Ferry Terminal and Dock Improvements Project* (NMFS 2015a)
- the *Environmental Assessment on the Issuance an Incidental Harassment Authorization to the City of Seattle's Department of Transportation for the Take of Small Numbers of Marine Mammals Incidental to the Elliott Bay Seawall Project in Seattle, Washington* (NMFS 2013)

In each case NMFS concluded that the proposed issuance of an Authorization for in-water construction activities would not significantly affect the quality of the human environment, and issued findings of no significant impact (FONSI).

### 1.3.3 NEPA Public Scoping Summary

NAO 216-6 established agency procedures for complying with NEPA and the implementing NEPA regulations issued by the CEQ. Consistent with the intent of NEPA and the clear direction in NAO 216-6 to involve the public in NEPA decision-making, NMFS requested comments on the potential environmental impacts described in UniSea's MMPA application and in the *Federal Register* notice of the proposed Authorization (80 FR 79822, December 23, 2015). The CEQ regulations further encourage agencies to integrate the NEPA review process with review under the environmental statutes. Consistent with agency practice NMFS integrated our NEPA review and preparation of this EA with the public process required by the MMPA for the proposed issuance of an Authorization.

The *Federal Register* notice of the proposed Authorization (80 FR 79822, December 23, 2015), combined with our preliminary determinations, supporting analyses, and corresponding public comment periods are instrumental in providing the public with information on relevant environmental issues and offering the public a meaningful opportunity to provide comments to us for consideration in both the MMPA and NEPA decision-making processes.

The *Federal Register* notice of the proposed Authorization summarized our purpose and need; included a statement that we would prepare an EA for the proposed action; and invited interested parties to submit written comments concerning the application and our preliminary analyses and findings including those relevant to consideration in the EA. NMFS invited interested parties to submit written comments concerning the application and our preliminary analyses and findings including those relevant to consideration in the draft EA. The public comment period for the notice of the proposed Authorization began on December 23, 2015 and ended on January 22, 2016.

We posted UniSea's application on our web site concurrently with the release of the *Federal Register* notice of the proposed Authorization. We base this EA on the information included in our *Federal Register* notice, the documents it references, and the public comments provided in response. At the conclusion of this process, we will post the final EA, and, if appropriate, FONSI, on the same web site.

### 1.3.4 Relevant Comments on our *Federal Register* Notice

During the 30-day public comment period on the notice of the proposed Authorization, we received no comments from private citizens and one comment from the Marine Mammal Commission.

The Marine Mammal Commission provides comments on all proposed incidental take authorizations as part of their established role under the MMPA (§ 202 (a)(2)). The Marine Mammal Commission concurred with our preliminary findings and recommended that we issue the Authorization to UniSea subject to inclusion of the proposed mitigation and monitoring as described in the *Federal Register* notice of the proposed Authorization.

We have considered the comments regarding monitoring and mitigation measures within the context of the MMPA requirement to effect the least practicable impact to marine mammals and their habitat. Consequently, we have determined, based on the best available data that the mitigation measures proposed by UniSea and us are the most feasible and effective monitoring and mitigation measures to achieve the MMPA requirement of effecting the least practicable impact on each marine mammal species or stock.

We will provide responses to the public comments in the *Federal Register* notice announcing our decision on whether to issue the Authorization. We fully considered the comments, particularly those related to mitigation and monitoring measures, in preparing the proposed final Authorization and this EA. None of the comments received in response to this application have resulted in substantive changes to this EA.

## 1.4 OTHER PERMITS, LICENSES, OR CONSULTATION REQUIREMENTS

This section summarizes federal, state, and local permits, licenses, approvals, and consultation requirements necessary to implement the proposed action. NMFS incorporates those descriptions by reference in this EA and briefly summarizes them in this section.

### 1.4.1 ENDANGERED SPECIES ACT

Section 7 of the ESA and implementing regulations at 50 CFR § 402 require federal agencies to consult with the appropriate federal agency (either NMFS or the U.S. Fish and Wildlife Service) for federal actions that "may affect" a listed species or critical habitat. Accordingly, the ESA requires federal agencies to ensure that the proposed action would not likely jeopardize the continued existence of any threatened or endangered species or result in destruction or adverse modification of critical habitat for such species. There is one marine mammal species listed as endangered under the ESA with confirmed or possible occurrence in the proposed project area: the Steller sea lion, specifically the western Distinct Population Segment (DPS).

Our proposed issuance of an Authorization is a federal action subject to ESA section 7 consultation requirements. Therefore we requested consultation under section 7 with the NMFS Alaska Regional Office for the proposed Authorization to UniSea for the incidental take of western DPS Steller sea lions based on UniSea's proposed action to conduct dock construction activities on Unalaska Island. The U.S. Army Corps of Engineers (USACE), as the Federal agency that will permit the proposed construction project, provided a Biological Assessment (via PND Engineers, Inc., which acted as the designated federal representative for USACE), on their action with the NMFS Alaska Regional Office, to fulfill the requirements of formal consultation under ESA section 7. The U.S. Army Corps of Engineers requested authorization for the incidental take of western DPS Steller sea lions the under the ESA.

Under the ESA, NMFS has designated critical habitat for Steller sea lions based on the location of terrestrial rookery and haulout sites, spatial extent of foraging trips, and availability of prey items (50 CFR 226.202). UniSea's proposed construction activities are within 20 nm of two haulouts and one rookery for Steller sea lions. In February 2016, NMFS Alaska Region Protected Resources Division issued a Biological Opinion (BiOp) with an Incidental Take Statement to us and to USACE which concluded that the issuance of the Authorization and the permitting of the proposed construction activities were not likely to jeopardize the continued existence of the western DPS of Steller sea lions. The BiOp also concluded that the issuance of the Authorization and the proposed construction activities would not affect designated critical habitat for the species. Last, the Protected Resources Division issued an ITS for western DPS Steller sea lions

which contains reasonable and prudent measures implemented by the terms and conditions to minimize the effect of the proposed authorized take.

### 1.4.2 Marine Mammal Protection Act

We discuss the MMPA and its provisions that pertain to the proposed action described within section 1.2.

# Chapter 2 – Alternatives

## 2.1 Introduction

The NEPA and the implementing CEQ regulations (40 CFR §§ 1500-1508) require consideration of alternatives to proposed major federal actions and NAO 216-6 provides agency policy and guidance on the consideration of alternatives to our proposed action. An EA must consider all reasonable alternatives, including the No Action Alternative. This provides a baseline analysis against which we can compare the other alternatives.

To warrant detailed evaluation as a reasonable alternative, an alternative must meet our purpose and need. In this case, and as we previously explained, an alternative meets the purpose and need if it satisfies the requirements under section 101(a)(5)(D) the MMPA. We evaluated each potential alternative against these criteria; identified one action alternative along with the No Action Alternative; and carried these forward for evaluation in this EA.

Alternative 1 includes a suite of mitigation measures intended to minimize any potential adverse effects to marine mammals. This chapter describes both alternatives and compares them in terms of their environmental impacts and their achievement of objectives.

## 2.2 Description of UniSea's Proposed Activities

We presented a general overview of UniSea's proposed construction activities in our *Federal Register* notice of the proposed Authorization (80 FR 79822, December 23, 2015). Also, UniSea's application (UniSea 2015a) describes the construction protocols in detail. We incorporate those descriptions by reference in this EA and briefly summarize them here.

### 2.2.1 Specified Time and Specified Area

UniSea proposes to remove the existing G1 dock and replace it with a new dock during the period March 1, 2016 through February 28, 2017. The total construction time, including removal of old piles and construction of the new dock, is expected to take no more than 180 days. If construction work is not completed within one year, UniSea will apply for a second IHA for any additional construction work that was not completed in the first year of the project. All construction work will occur in Iliuliuk Harbor, a small harbor on an islet called Amaknak Island that is connected by a bridge to the larger Unalaska Island in the eastern Aleutian Islands archipelago.

### 2.2.2 Construction Activities

The proposed construction activities include both the removal of the existing dock structure and the construction of the new dock, and will entail impact pile driving, vibratory pile driving and removal, and down-the-hole drilling. A total of 73 steel and 72 timber piles will be removed. A total of 78 permanent piles (28 steel piles [24" and 18"] and 50 fiber-reinforced polymer piles [24"]) and 180 temporary piles (18" steel) will be installed. A total of 887 sheet piles will also be installed.

#### 2.2.2.1 REMOVAL OF EXISTING DOCK STRUCTURE

The existing dock (consisting of steel support piles, steel superstructure, and concrete deck) will be completely removed. Vibratory pile removal will consist of clamping the jaws of the vibratory hammer to the pile to be removed, extracting the pile (with vibratory hammer turned on) to the point where the pile is temporarily secured and removal can be completed with crane line rigging. The pile will then be completely removed from the water by hoisting with crane line rigging, and then placed on the ground or deck of a barge. In addition to vibratory pile removal, demolition of the existing dock and removal of existing riprap/obstructions will be performed with track excavators, loaders, cranes, barges, cutting equipment, and labor forces. The contractor will be required to dispose of (or salvage) demolished items in accordance with all federal, state, and local regulations. Dewatering will not be required as all extraction will take place from the existing dock, from shore, and/or from a work barge.

#### 2.2.2.2 INSTALLATION OF NEW PILES AND SHEET PILES

The new sheet pile bulkhead dock and seawater intake structure will be installed utilizing a crane and vibratory hammer. After all piles of several sheet pile cells have been installed, clean rock fill will be placed within the sheet pile cells from the shore. This process will continue sequentially until all of the sheet pile cells are installed and backfilled.

Approximately 50 fiber-reinforced polymer (FRP) composite fender piles will be installed along the face of the new sheet pile dock, fastened to the face at the top, and cut to elevation. Initial driving of the FRP fender piles will be done with a vibratory or impact hammer, and final seating of the piles into the shallow bedrock will be done with an impact hammer. Two dolphins, each with five 24-inch diameter steel support piles each and two 24-inch diameter steel fender pin piles, will be installed and cut to elevation for installation of a structural steel cap. The support piles will be driven and seated into shallow bedrock with an impact hammer.

Fender support/pin piles will then be installed and cut to elevation. The fender support/pin piles will either be installed in a socket drilled into the shallow bedrock (driven with an impact hammer and possibly a vibratory hammer down into the socket), by the down-the-hole drilling technique, or with a rock anchor system. Pre-assembled fender systems (energy absorbers, sleeve piles, steel framing, and fender panels) will be lifted and installed onto fender support piles via crane.

Down-the-hole drilling is a construction technique that entails the use of a rotary drill bit that is impacted when hard material is encountered. The piling is fit over the drill with the drill head extending beneath the pile; as the drill advances downward, so does the pile. When the proper depth is achieved, the drill is retracted and the piling is left in place. We assume that fender support/pin piles, miscellaneous support piles, and temporary support piles would be installed via impact pile driving. However, if they are ultimately installed by down-the-hole drilling, this down-the-hole drilling would occur instead of, not in addition to, impact driving for installation of fender support/pin piles, miscellaneous support piles, and temporary support piles.

Miscellaneous support piles (including catwalk and dock face support piles) will then be installed and cut to elevation. Temporary support piles for the contractor's pile driving template structures will be installed to aid with construction and removed after the permanent sheet piles or support piles have been installed. Temporary support piles will likely be steel H-piles (18 inch or smaller) or steel round piles (18 inch diameter or smaller).

## 2.3 DESCRIPTION OF ALTERNATIVES

### 2.3.1 ALTERNATIVE 1 – ISSUANCE OF AN AUTHORIZATION WITH MITIGATION MEASURES

The Proposed Action constitutes Alternative 1 and is the Preferred Alternative. Under this alternative, we would issue an Authorization (valid from March 2016 through February 2017) to UniSea allowing the incidental take, by Level B harassment, of Steller sea lions and harbor seals subject to the mandatory mitigation and monitoring measures and reporting requirements set forth in the proposed Authorization.

#### 2.3.1.1 PROPOSED MITIGATION MEASURES

As described in Section 1.2.1, NMFS must prescribe the means of effecting the least practicable adverse impact on the species or stocks of marine mammals and their habitat. In order to do so, we must consider UniSea's proposed mitigation measures, as well as other potential measures. NMFS' evaluation of potential measures includes consideration of the following factors in relation to one another: (1) the manner in which, and the degree to which, we expect the successful implementation of the measure to minimize adverse impacts to marine mammals; (2) the proven or likely efficacy of the specific measure to minimize adverse impacts as planned; and (3) the practicability of the measure for applicant implementation.

Any additional mitigation measure proposed by NMFS beyond what the applicant proposes should be able to or have a reasonable likelihood of accomplishing or contributing to the accomplishment of one or more of the following goals:

- Avoidance or minimization of marine mammal injury, serious injury, or death wherever possible;
- A reduction in the numbers of marine mammals taken (total number or number at biologically important time or location);
- A reduction in the number of times the activity takes individual marine mammals (total number or number at biologically important time or location);
- A reduction in the intensity of the anticipated takes (either total number or number at biologically important time or location);
- Avoidance or minimization of adverse effects to marine mammal habitat, paying special attention to the food base; activities that block or limit passage to or from biologically important areas; permanent destruction of habitat; or temporary destruction/disturbance of habitat during a biologically important time; and
- For monitoring directly related to mitigation, an increase in the probability of detecting marine mammals, thus allowing for more effective implementation of the mitigation.

To reduce the potential for disturbance from acoustic stimuli associated with the proposed construction activities, UniSea has agreed to implement monitoring and mitigation measures for marine mammals. These measures are described below:

- Establishment of Level A and Level B harassment zones: UniSea has established zones to delineate areas in which marine mammals would experience Level A or Level B harassment if they were exposed to underwater sound from construction activity (Table 3). These zones are based on the modeled distances from the pile being driven/removed to the isopleth that coincides with the minimum thresholds for Level A and Level B harassment, based on NMFS's acoustic criteria. Marine mammal monitoring (described

below) will occur in these zones to prevent Level A take of any marine mammals, to prevent Level A and Level B take of any marine mammals other than Steller sea lions and harbor seals, and to observe and record any Level B take of Steller sea lions or harbor seals that occurs as a result of exposure to construction noise. No take of cetaceans is anticipated or proposed for authorization; zones for cetaceans will be established and monitored solely for the purpose of preventing any take in the event that a cetacean approaches the Level B zone, which would trigger shutdown of construction activity.

- Soft Start: A "soft-start" technique is intended to allow marine mammals to leave the area before the pile driver reaches full power. Vibratory hammers will initiate noise for 15 seconds at a reduced energy level, followed by 1- minute waiting period, and repeat this procedure two additional times. Impact hammers will initiate three strikes of the hammer at a reduced energy level, followed by a 30-second waiting period and repeat this procedure two additional times (the actual number of strikes at reduced energy will vary because operating the hammer at less than full power results in "bouncing" of the hammer as it strikes the pile, resulting in multiple "strikes"). These soft start techniques will be required at the beginning of each day's pile driving work and at any time following a cessation of impact pile driving of thirty minutes or longer.
- Shutdown Measures: UniSea will implement shutdown measures if a Steller sea lion or harbor seal is sighted in, or appears likely to enter, the Level A zone for pinnipeds (Table 3), or if any marine mammal other than a Steller sea lion or harbor seal appears likely to enter the Level B zone. All pile installation/removal activities and other in-water construction activities would be immediately halted. In the event of a shutdown of pile installation or removal operations, construction activities may resume only when: the Steller sea lion or harbor seal that was within, or appeared likely to enter, the Level A zone has been visually confirmed beyond the Level A zone, or 15 minutes have passed without re-detection of the animal; any other marine mammal under NMFS jurisdiction that was within, or appeared likely to enter, the Level A or B harassment zones has been visually confirmed beyond the Level B zone, or 15 minutes (in the case of pinnipeds other than Steller sea lion or harbor seal) or 30 minutes (in the case of a cetacean) have passed without re-detection of the animal.
- Time Restriction: Work would occur only during daylight hours, when visual monitoring of marine mammals can be conducted.
- Air Bubble Curtain: UniSea will use bubble curtains during all impact pile driving. Bubble curtains create a column of air bubbles, which absorb and scatter sound waves, around each pile from the substrate to the surface of the water.

**Table 3: Modeled Level A and Level B harassment zones for vibratory and impact driving associated with the proposed dock construction project in Iliuliuk Harbor, Unalaska, March 2016 through February 2017.**

| Sound Source | Pinniped or Cetacean | MMPA Harassment Level | Harassment Threshold (dB) | Radius of Respective Zone (m)* | Mitigation Action |
|---|---|---|---|---|---|
| Vibratory and Impact Pile Driver | Pinniped | Level A | 190 | 10 | Shutdown |
| Vibratory | Cetacean | Level A | 180 | 10 | Shutdown |
| Impact | Cetacean | Level A | 180 | 40 | Shutdown |
| Impact | Pinniped | Level B | 160 | 900 | Monitor |
| Impact | Cetacean | Level B | 160 | 900 | Shutdown |
| Vibratory | Pinniped | Level B | 120 | 1,300 | Monitor |
| Vibratory | Cetacean | Level B | 120 | 1,300 | Shutdown |

* This represents the furthest modeled distance from the pile being driven to the respective threshold. Landmasses will effectively limit the propagation of underwater sound (see Figures 1 and 2).


**Figure 1. The area (shown in yellow) expected to be ensonified up to 120 dB (Level B harassment threshold for continuous sounds) during vibratory driving, based on modeling. This also represents the extent of the area that will be monitored during all construction activities.**


**Figure 2 The area (shown in yellow) expected to be ensonified up to 160 dB (Level B harassment threshold for impulse sounds) during impact driving, based on modeling.**

#### 2.3.1.2 PROPOSED MONITORING MEASURES

UniSea proposes to sponsor marine mammal monitoring during the project, in order to implement the mitigation measures described above that require real-time monitoring, and to satisfy the monitoring requirements of the Authorization. The Authorization, if issued, would require UniSea to monitor the area for marine mammals during all in-water construction activities, ensure the zones were cleared of marine mammals as necessary, and implement shutdown procedures, as described below:

- Land-based trained observers would be located on site before, during, and after in-water construction activity at sites appropriate for monitoring marine mammals within and approaching the Level A and Level B harassment zones. During observation periods, observers would continuously scan the area for marine mammals using binoculars and the naked eye.
- Observers would "clear" the zones by monitoring the Level A and Level B harassment zones for 30 minutes prior to the start of pile driving/removal or other in-water construction activities to ensure no marine mammals within NMFS's jurisdiction are present within or approaching the Level A harassment zone, and that no marine mammals within NMFS's jurisdiction other than Steller sea lions and harbor seals are present within the Level B harassment zone.
- Observers would notify the construction contractor if a Steller sea lion or harbor seal is sighted in, or appears likely to enter, the Level A zone for pinnipeds, or if any marine mammal other than a Steller sea lion or harbor seal appears likely to enter the Level B zone; either of these scenarios would trigger immediate shutdown of all construction activity.
- Observers must be able to see the entirety of the Level A and Level B harassment zones; in-water construction activities would not be initiated until these zones are visible in their entirety.
- Observers would record observations on marine mammals within the vicinity of the proposed construction activities. These monitoring notes would provide dates, locations, species, behavioral state, numbers of animals and any disturbances or behavioral responses associated with construction activities.

#### 2.3.1.3 PROPOSED REPORTING MEASURES

UniSea would submit a draft report to NMFS within 90 days after completing the proposed construction activities. A final comprehensive report will be prepared and submitted to NMFS within 30 calendar days following resolution of comments on the draft report from NMFS. The final report would describe the activities conducted and observations of marine mammals near the proposed project. The final report would provide:

(1) A description of dates, times, and weather conditions during all construction and marine mammal monitoring activities;

(2) A description of the species, number, location, and behavior of all marine mammals observed throughout all construction activities;

(3) A description of all pile driving activity (pile locations, pile size and type) and construction activity not involving pile driving (location, type of activity, onset and completion times times);

(4) A description of any times when pile driving or other in-water construction was delayed due to presence of marine mammals within shutdown zones.

(5) A description of the bubble curtain sound attenuation system, including design specifications.

(6) A description of the implementation and effectiveness of the monitoring and mitigation measures of the Authorization and full documentation of methods, results, and interpretation pertaining to all monitoring.

(7) An estimate of the number (by species) of marine mammals that are known to have been exposed to acoustic stimuli associated with construction activities;

In the unanticipated event that the specified activity clearly causes the take of a marine mammal in a manner prohibited by the Authorization (if issued), such as an injury (Level A harassment), serious injury, or mortality (*e.g.*, vessel-strike, stampede, etc.), UniSea would immediately cease the specified activities and immediately report the incident to the Division Chief, Permits and Conservation Division, Office of Protected Resources and the Alaska Regional Stranding Coordinator. UniSea may not resume activities until NMFS is able to review the circumstances of the prohibited take. The report must include the following information:

- Time, date, and location (latitude/longitude) of the incident;
- Description and location of the incident (including water depth, if applicable);
- Environmental conditions (*e.g.*, wind speed and direction, Beaufort sea state, cloud cover, and visibility);
- Description of all marine mammal observations in the 24 hours preceding the incident;
- Species identification or description of the animal(s) involved;
- Fate of the animal(s); and
- Photographs or video footage of the animal(s) (if equipment is available).

In the event that UniSea discovers an injured or dead marine mammal, and the cause of the injury or death is unknown and the death is relatively recent (i.e., in less than a moderate state of decomposition), UniSea would immediately report the incident to the Division Chief, Permits and Conservation Division, Office of Protected Resources and the Alaska Regional Stranding Coordinator. The report must include the same information identified in the paragraph above this section. Activities may continue while we review the circumstances of the incident.

In the event that UniSea discovers an injured or dead marine mammal, and it is determined the death is not associated with or related to the authorized activities (*e.g.*, previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), UniSea would report the incident to the incident to the Division Chief, Permits and Conservation Division, Office of Protected Resources and the Alaska Regional Stranding Coordinator within 24 hours of the discovery. UniSea would provide photographs or video footage (if available) or other documentation of the stranded animal sighting to us. We would allow UniSea to continue their activities.

### TAKE ESTIMATES

UniSea has requested take by Level B harassment as a result of underwater sound produced through pile driving associated with the proposed dock construction project. We expect that the proposed project would cause short-term behavioral disturbance and/or displacement of marine mammals. NMFS does not propose to authorize any injury, serious injury, or mortality as a result

of the proposed activity; we expect all potential takes to fall under the category of Level B harassment only.

Based on best available information, NMFS estimates that the construction activities could potentially affect up to 2,177 Steller sea lions and up to 385 harbor seals by Level B behavioral harassment over the course of the proposed authorization (Table 4). For each population stock, the estimates of exposure are small numbers, representing approximately four percent of the western DPS of Steller sea lions and approximately eleven percent of the Aleutian Islands stock of harbor seals (Table 4). Furthermore, the total number of takes requested for Steller sea lions and harbor seals would only affect the localized populations. It should also be noted that the proposed total number of takes is expected to include multiple incidences of harassment of the same individual(s) both within and among days, thus the number of individual animals that will be exposed to Level B harassment is expected to be significantly less than the proposed take estimates.

This Preferred Alternative would satisfy the purpose and need of our proposed action under the MMPA–issuance of an Authorization, along with required mitigation measures and monitoring that meets the standards set forth in section 101(a)(5)(D) of the MMPA and the implementing regulations.

### 2.3.2 ALTERNATIVE 2 – NO ACTION ALTERNATIVE

We are required to evaluate the No Action Alternative per NEPA and CEQ implementing regulations. The No Action Alternative serves as a baseline to compare the impacts of the Preferred and other Alternatives. Under the No Action Alternative, NMFS would not issue the Authorization, which would be based on an inability to make one of the findings required by section 101(a)(5)(D) (*i.e.*, negligible impact or small numbers; subsistence impacts are not implicated here). Under the No Action Alternative, UniSea could choose not to proceed with their proposed construction activities or to proceed without an Authorization. If they choose the latter, they would not be exempt from the MMPA take prohibitions and would be in violation of the MMPA if take of marine mammals occurs. For purposes of NEPA analysis only, we characterize the No Action Alternative as UniSea conducting the proposed dock construction activities without the mitigation and monitoring measures prescribed in the proposed Authorization. We take this approach to meaningfully evaluate the primary environmental issues – the impact on marine mammals from these activities in the absence of protective measures.

## CHAPTER 3 – AFFECTED ENVIRONMENT

This chapter describes existing conditions in the proposed project area. Descriptions of the physical and biological environment of the action area are contained in the documents incorporated by reference (see section 1.3.1) and summarized here.

### 3.1 PHYSICAL ENVIRONMENT

NMFS' proposed action and alternatives relate only to the proposed issuance of our Authorization of incidental take of marine mammals and not to the physical environment Therefore, certain aspects of the physical environment are not relevant to our proposed action (see section 1.3.2 - Scope of Environmental Analysis).

In summary, Iliuliuk Harbor is a small harbor nestled in the southeast of Amaknak Island, a small islet in the Aleutian Islands archipelago in the Gulf of Alaska. Amaknak Island is approximately 4 miles long and 1 mile wide at its widest point, and is located in Unalaska Bay, a large bay on the northern side of Unalaska Island that opens into the Bering Sea. Unalaska Bay and the contiguous marine waters are at latitude 54°00' N and longitude 166°30'W. Amaknak Island is connected via a bridge to the much larger Unalaska Island, located west of Akutan Pass in the Aleutian Island chain. The Gulf of Alaska generally includes all waters within the Exclusive Economic Zone along the southeastern, southcentral, and southwestern coasts of Alaska from Dixon Entrance to Unimak Pass (NMFS 2007). Numerous troughs and shallow banks characterize the topography of the western Gulf of Alaska. The Aleutian shelf area, as defined by the 200-meter isobath, is narrower than the eastern Bering Sea shelf and drops abruptly to depths of 5000-6000 meters in the Aleutian Trench, which parallels the shelf edge (NMFS 2007). The Unalaska and Amaknak Island coasts are, with few exceptions, steep and rocky, and most drop sharply into deep water.

### 3.1.1 Marine Mammal Habitat

We presented information on marine mammal habitat and the potential impacts to marine mammal habitat in the notice of the proposed Authorization (80 FR 79822, December 23, 2015). We incorporate that description by reference here. In summary, marine mammals haul out on the shorelines or in intertidal areas of Unalaska Bay, but are not known to haul out within Iliuliuk Harbor.

UniSea's proposed construction activities fall within an area designated as critical habitat for Steller sea lions under the ESA. NMFS has defined Steller sea lion critical habitat by a 20-nautical mile (nm) radius encircling a major haul-out or rookery (50 CFR 226.202). There are two haulouts, known as Old Man Rocks and Unalaska/Cape Sedanka, within the 20 nm radius; they are located approximately 15 and 20 nm (straight line distance) from the project area, respectively. The closest rookery is Akutan/Cape Morgan, which is approximately 20 nm from the project area using straight line distance over the mountains.

## 3.2 Biological Environment

### 3.2.1 Marine Mammals

We provide information on the occurrence of marine mammals with possible or confirmed occurrence in the project area in section 1.1.2 of this EA. The western DPS of Steller sea lions and the Aleutian Islands stock of harbor seals are the only marine mammals most likely to be present in the action area.

The *Federal Register* notice of the proposed Authorization (80 FR 79822, December 23, 2015) provided information on the stock, regulatory status, abundance, occurrence, seasonality, and hearing ability of the marine mammals in the action area. UniSea's application (UniSea 2015a) also provided information on the life history and population size information for marine mammals within the action area. We incorporate those descriptions by reference and briefly summarize the information here.

**Western DPS of Steller sea lions:** Steller sea lions are distributed mainly around the coasts to the outer continental shelf along the North Pacific rim from northern Hokkaido, Japan through the Kuril Islands and Okhotsk Sea, Aleutian Islands and central Bering Sea, southern coast of Alaska and south to California (Loughlin *et al*., 1984). Based on distribution, population response, and phenotypic and genotypic data, two separate stocks of Steller sea lions are

recognized within U. S. waters, with the population divided into western and eastern distinct population segments (DPS) at 144°W (Cape Suckling, Alaska) (Loughlin, 1997). The western DPS includes Steller sea lions that reside in the central and western Gulf of Alaska, Aleutian Islands, as well as those that inhabit the coastal waters and breed in Asia (e.g., Japan and Russia). Only the western DPS is considered in this proposed authorization because the eastern DPS occurs outside the geographic area under consideration.

The species as a whole was ESA-listed as threatened in 1990 (55 FR 49204) because of significant declines in the population which may have been caused by nutritional stress due to competition with commercial fisheries, environmental change, disease, killer whale predation, incidental take, and shooting (illegal and legal). In 1997, the species was divided into two separate DPSs, as described above, and the western DPS was reclassified as endangered under the ESA because of its continued decline since the initial listing in 1990 (62 FR 24345).

The most recent comprehensive estimate of the abundance of the western DPS in Alaska is 55,422 individuals (both pups and non-pups), based on aerial surveys of non-pups conducted from 2008–2011 and estimates of total pup production (Allen and Angliss 2014). This figure represents a marked decline from abundance estimates in the 1950s (N = 140,000) and 1970s (N = 110,000). Pup counts in the Western DPS in Alaska overall increased at 1.8 percent annually between 2000 and 2014; non-up counts increased at 2.2 percent annually over the same period (Fritz et al. 2015). However, survey data collected since 2000 indicate that the population decline continues in the central and western Aleutian Islands while populations east of Samalga Pass (~170° W) have increased (Allen and Angliss 2014). Survival rates east of Samalga Pass have rebounded to nearly the same levels estimated for the 1970s, prior to the decline in abundance. In addition, population models indicate that natality among the increasing population east of Samalga Pass in the period 2000−2012 may not be significantly different from rates estimated for the 1970s. The proposed project location in Iliuliuk Harbor is approximately 220 km east of Samalga Pass. Based on data from NMML breeding season surveys, the population of Steller sea lions in the eastern Aleutian Islands (from Unimak Island through Umnak Island, 163-169°W) has been increasing at 2-3% per year since 2000.

Steller sea lions are the most abundant marine mammals in the project area. Data from the NOAA National Marine Mammal Laboratory (NMML) surveys of haulouts on Unalaska Island suggest the Steller sea lion haulouts nearest to the project location are at Priest Rock (approximately 19 km from the project site), Cape Wislow (approximately 19 km from the project site) and Bishop Point (approximately 27 km from the project site). Survey data from Bishop Point shows a mean of 193 individual sea lions observed over 36 separate surveys from 1960 to 2014; Priest Rock had a mean of 12 individuals observed since 1994, with higher totals recorded recently (107 individuals counted in 2014); and Cape Wislow had 60 individuals observed in 1989, but no sea lions observed at the site during the 20 surveys that have occurred there from 1990 to 2014.

Steller sea lions are not known to haul out in the project area, though individuals are observed with regularity in the water within Iliuliuk Harbor. The number of sea lions in the immediate project area varies depending on the season, with local abundance in the breeding season generally higher overall than in the non-breeding season, and the on the presence of fishing vessels in the harbor. Sea lions are likely drawn to the project location by the abundant and predictable sources of food provided by commercial fishing vessels and fish processing facilities.

**Aleutian Islands stock of harbor seals:** Harbor seals range from Baja California north along the west coasts of Washington, Oregon, California, British Columbia, and Southeast Alaska; west through the Gulf of Alaska, Prince William Sound, and the Aleutian Islands; and north in the Bering Sea to Cape Newenham and the Pribilof Islands. They haul out on rocks, reefs, beaches, and drifting glacial ice, and feed in marine, estuarine, and occasionally fresh waters. They generally are non-migratory, with local movements associated with such factors as tides, weather, season, food availability, and reproduction (Scheffer and Slipp 1944, Fisher 1952, Bigg 1969, 1981, Hastings et al. 2004).

In 2010, harbor seals in Alaska were partitioned into 12 separate stocks based largely on genetic structure (Allen and Angliss 2012). Only the Aleutian Islands stock is considered here because other stocks occur outside the geographic area under consideration. Distribution of the Aleutian Islands stock extends from Ugamak Island (southwest of Unimak Island in the Eastern Aleutians) west to Attu Island (the westernmost Aleutian Island in the U.S.). The abundance estimate for the Aleutian Islands stock is 3,579; however, this estimate is based on survey data that is over 10 years old. The current statewide abundance estimate for Alaskan harbor seals is 152,602 based on aerial survey data collected during 1998-2007 (Allen and Angliss 2012). The current population trend in the Aleutian Islands is unknown. Additionally, the haul-out patterns of harbor seals in the Aleutian Islands have not been studied, and there is no stock specific estimate of a survey correction factor.

Small et al. (2008) compared harbor seal counts from 106 Aleutian islands surveyed in 1977–1982 (8,601 seals) with counts from the same islands during a 1999 aerial survey (2,859 seals). Counts decreased at a majority of the islands surveyed. A 45% decline was estimated in the Eastern Aleutians (n = 35 islands), with overall estimates for the entire Aleutian Islands chain showing a 67% decline during the approximate 20-year period. Seal counts decreased at the majority of islands in each region, the number of islands with over 100 seals decreased ~70%, and the number of islands with no seals counted increased approximately 80%, indicating that harbor seal abundance throughout the Aleutian Islands was substantially lower in the late 1990s than in the 1970s and 1980s (Small et al. 2008).

Harbor seals are only occasionally seen in Iliuliuk Harbor. No pupping or haulout sites exist within the project area. The closest known harbor seal haulout is located approximately 3 km away from the proposed construction site on the northern tip of Hog Island in Unalaska Bay; NMML survey data shows an average of ~11 seals observed at the site over the course of four surveys from 2008-2010. Surveys were conducted only in late July and August, thus seasonal information on abundance or distribution is not available. NMML survey data suggest there are at least six other harbor seal haulouts in and around Unalaska Bay that are further from the project site; the maximum number of seals observed at any of these haulouts has not exceeded 39 individuals at any one time.

## 3.3 SOCIAL AND ECONOMIC ENVIRONMENT

Potential impacts to the social and economic environment resulting from the UniSea G1 dock construction project would be limited to impacts on subsistence hunting as a result of harassment of marine mammals. Subsistence hunting and fishing is an important part of the history and culture of Unalaska Island. However, the number of Steller sea lions and harbor seals harvested in Unalaska decreased from 1994 through 2008; in 2008, the last year for which data is available, there were no Steller sea lions or harbor seals reported as harvested for subsistence use. Data on pinnipeds hunted for subsistence use in Unalaska has not been collected since 2008. For a

summary of data on pinniped harvests in Unalaska from 1994-2008, see Section 8 of the IHA application.

Aside from the apparently decreasing rate of subsistence hunting in Unalaska, Iliuliuk Harbor is not likely to be used for subsistence hunting or fishing due to its industrial nature, with several fish processing facilities located along the shoreline of the harbor. In addition, the UniSea G1 dock construction project is likely to result only in short-term, temporary impacts to pinnipeds in the form of possible behavior changes, and is not expected to result in the injury or death of any marine mammal. As such, the project is not likely to adversely impact the availability of any marine mammal species or stocks that may otherwise be used for subsistence purposes, and therefore is not expected to negatively impact the social and economic environment of Unalaska.

The UniSea G1 dock is a primary facility that supports activities occurring in the nearby fish processing facilities. However, the current G1 Dock, which would be replaced as a result of the the proposed dock construction project, is partially unusable as a large portion of the dock is condemned due to corrosion and damage. In addition, the current UniSea processing plant is currently nearing capacity; in order to remain competitive in the crab and fish processing market through increased product quality, UniSea hopes to improve the capacity of the processing plant by moving the processing facilities closer to the dock. The design of the proposed G1 dock would allow a new processing plant to be located closer to the shoreline, which would allow for safe movement of raw product from fishing vessels and a shorter trip to the processing plant. As such, the proposed dock construction project would facilitate increased capacity and therefore has the potential to have a positive impact on the social and economic environment of Unalaska.

# CHAPTER 4 – ENVIRONMENTAL CONSEQUENCES

This chapter of the EA includes a discussion of the impacts of the two alternatives on the human environment. UniSea's application, our notice of a proposed Authorization, and other related environmental analyses identified previously, inform our analysis of the direct, indirect, and cumulative effects of our proposed issuance of an Authorization.

Under the MMPA, we have evaluated the potential impacts of UniSea's proposed dock construction activities in order to determine whether to authorize incidental take of marine mammals. Under NEPA, we have determined that an EA is appropriate to evaluate the potential significance of environmental impacts resulting from the issuance of our Authorization.

## 4.1 EFFECTS OF ALTERNATIVE 1 – ISSUANCE OF AN AUTHORIZATION WITH MITIGATION MEASURES

Alternative 1 is the Preferred Alternative, where we would issue an Authorization to UniSea allowing the take of Steller sea lions and harbor seals by Level B harassment incidental to the proposed dock construction activities from March 2016 through February 2017, subject to the mandatory mitigation and monitoring measures and reporting requirements set forth in the Authorization, if issued.

### 4.1.1 IMPACTS TO MARINE MAMMAL HABITAT

NMFS' proposed action, the Preferred Alternative, would have no additive or incremental effect on the physical environment, or on components of the biological environment that function as marine mammal habitat, beyond those resulting from the dock construction project. The proposed activity area is not located within a marine sanctuary or a National Park. The proposed

activities would not result in substantial damage to ocean and coastal habitats that might constitute marine mammal habitat. We do not anticipate that the project would physically alter the marine environment or negatively impact the physical environment or components of the biological environment that function as marine mammal habitat in the proposed action area. The MMPA Authorization would not impact physical or biological habitat features, such as substrates and/or water quality or availability of marine mammal prey, as the Authorization allows only for the take of marine mammals by Level B harassment and includes mitigation measures to reduce impacts to marine mammals. Those mitigation measures will not have any effect on the physical environment and are used to minimize potential environmental effects from project activities under this alternative. The effects of the proposed project on marine mammal habitats are anticipated to be short-term and minor because they are associated with construction activities that would occur intermittently over a 12-month period.

Construction activities would likely have temporary impacts on habitat through increases in underwater and airborne sound from pile removal and installation. Displacement of marine mammals by noise would not be permanent and would not have long term effects. The proposed project is not anticipated to have any habitat-related effects that could cause significant or long-term consequences for individual marine mammals or their populations, because pile driving and other noise sources would be temporary and intermittent.

The proposed construction project location is within ESA-designated critical habitat for Steller sea lions, as there are two haulouts and one rookery within a 20 nm radius of the project site. However, project-related disturbances would not be detectable at these haulouts and rookeries, as the closest of these is located approximately 15 nm from the project site. The level of disturbance and habitat alteration in the project area would be insignificant and discountable, especially when considered in relation to the activity already taking place and apparent tolerance of sea lions and harbor seals in the project area. The proposed construction site is in a highly industrialized harbor with frequent vessel traffic; Steller sea lions are found frequently in the area, apparently drawn to the harbor by the presence of fishing boats and fish processing facilities. Steller sea lions and harbor seals do not haul out in the immediate area of the proposed construction project.

More information on potential impacts to marine mammal habitat is contained in UniSea's application and our proposed Authorization (80 FR 79822, December 23, 2015), which are incorporated herein by reference.

### 4.1.2 Impacts to Marine Mammals

We expect that acoustic stimuli generated from the proposed construction activities has the potential to impact marine mammals in the project area by causing a short-term behavioral disturbance (Level B harassment), and comprises the only likely source of effects to marine mammals from the proposed project. Our notice of proposed Authorization (80 FR 79822, December 23, 2015) and UniSea's IHA application provide detailed descriptions of these potential effects of proposed project activities on marine mammals. That information is incorporated herein by reference and summarized below.

The level of impact on marine mammals from acoustic stimuli varies depending on the species, the distance between the marine mammal and the sound source, the intensity and duration of the source, and environmental conditions. Marine mammals exposed to high-intensity sound repeatedly or for prolonged periods can experience hearing threshold shift (TS), which is the loss of hearing sensitivity at certain frequency ranges (Kastak et al. 1999; Schlundt et al. 2000; Finneran et al. 2002; 2005). TS can be permanent (PTS), in which case the loss of hearing

sensitivity is unrecoverable, or temporary (TTS), in which case the animal's hearing threshold would recover over time (Southall et al. 2007). Since marine mammals depend on acoustic cues for vital biological functions, such as orientation, communication, finding prey, and avoiding predators, hearing impairment could result in the reduced ability of marine mammals to detect or interpret important sounds. Repeated noise exposure that causes TTS could lead to PTS.

Chronic exposure to excessive, though not high-intensity, noise could cause masking at particular frequencies for marine mammals that utilize sound for vital biological functions (Clark et al. 2009). Masking is the obscuring of sounds of interest by other sounds, often at similar frequencies, and generally occurs when sounds in the environment are louder than, and of a similar frequency as, auditory signals an animal is trying to receive. Masking can interfere with detection of acoustic signals, such as communication calls, echolocation sounds, and environmental sounds important to marine mammals. Therefore, under certain circumstances, marine mammals whose acoustical sensors or environment are being severely masked could also be impaired. Masking occurs at the frequency band that the animals utilize. Unlike TS, masking can potentially impact the species at community, population, or even ecosystem levels, as well as individual levels. Masking affects both senders and receivers of the signals and could have long-term chronic effects on marine mammal species and populations.

Finally, in addition to TS and masking, exposure of marine mammals to certain sounds could lead to behavioral disturbance (Richardson et al. 1995), such as: changing durations of surfacing and dives, number of blows per surfacing, or moving direction and/or speed; reduced/increased vocal activities; changing/cessation of certain behavioral activities, such as socializing or feeding; visible startle response or aggressive behavior, such as tail/fluke slapping or jaw clapping; avoidance of areas where noise sources are located; and/or flight responses (e.g., pinnipeds flushing into water from haulouts or rookeries). The biological significance of many of these behavioral disturbances is difficult to predict, especially if the detected disturbances appear minor. Behavioral responses to sound are highly variable and context-specific and reactions, if any, depend on species, state of maturity, experience, current activity, reproductive state, auditory sensitivity, time of day, and many other factors.

We expect that any disturbances to Steller sea lions and harbor seals that result from exposure to sound associated with the proposed construction project would result, at worst, in temporary modification in behaviors or temporary changes in animal distribution. At most, we interpret these effects on marine mammals as falling within the MMPA definition of Level B (behavioral) harassment. Although the consequences of behavioral modification have the potential to be biologically significant if the change affected growth, survival, or reproduction, this is not expected from UniSea's proposed construction activities due to the relatively small scale, limited area, and brief duration of the project. We expect potential impacts to be minor because we do not anticipate measurable changes to the population or impacts to rookeries, mating grounds, and other areas of similar significance. We expect no long-term or substantial adverse effects on marine mammals, their habitats, or their role in the environment. We base our conclusion on the results of previous monitoring for the same activities.

**Estimated Take of Marine Mammals by Level B Incidental Harassment:** UniSea has requested take by Level B harassment as a result of underwater sound produced by activities associated with the proposed construction project. We expect that the proposed project would cause short-term behavioral disturbance and/or displacement for Steller sea lions and harbor seals expected to be in the proposed project area.

Under the Preferred Alternative, we would authorize incidental take, by Level B harassment only, of up to 2,177 Steller sea lions and up to 385 harbor seals over the course of the proposed Authorization (Table 4). For each population stock, the estimates of exposure are small numbers, representing approximately four percent of the western DPS of Steller sea lions and approximately eleven percent of the Aleutian Islands stock of harbor seals (Table 4). Furthermore, the total number of takes requested for Steller sea lions and harbor seals would only affect the localized populations pf these stocks. It should also be noted that the proposed total number of takes is expected to include multiple incidences of harassment of the same individual(s) both within and among days, thus the number of individual animals that will be exposed to Level B harassment is expected to be significantly lower than the proposed take estimates shown in Table 4. Our proposed Authorization notice and UniSea's IHA application contain complete descriptions of how these take estimates were derived.

We expect no long-term or substantial adverse effects on marine mammals, their habitats, or their role in the environment. We do not expect the construction activities to impact rates of recruitment or survival for any affected species or stock. Further, the activities would not take place in areas of significance for marine mammal feeding, breeding, or calving. We base our consideration on the results of previous monitoring reports from similar activities authorized in Alaska and in the Pacific Northwest United States.

**Table 4: Summary of estimated numbers of marine mammals potentially exposed to Level B harassment as a result of the proposed dock construction project.**

| Species | Estimates of Take | | Percentage of stock abundance |
|---|---|---|---|
| | Level A | Level B (120 dB) | |
| Steller sea lion (western DPS) | 0 | 2,177 | 4% |
| Harbor seal (Aleutian Islands stock) | 0 | 385 | 11% |

**Injury**: UniSea did not request authorization to take marine mammals by injury (Level A harassment), serious injury, or mortality. Our preliminary analyses presented in the *Federal Register* notice of the proposed Authorization (80 FR 79822, December 23, 2015), and previous monitoring reports from similar actions, show that there is no evidence that the planned activities could result in injury, serious injury, or mortality within the action area. Under the Preferred Alternative, the required mitigation and monitoring measures would minimize any potential risk of injury, serious injury, or mortality for marine mammals.

### 4.1.3 IMPACTS TO SUBSISTENCE USES

Noise from pile removal and installation associated with the pier construction activities may temporarily displace marine mammals from the area but animals are anticipated to return to the area following the cessation of pile removal and installation. Any displacement of sea lions or harbor seals from Iliuliuk Harbor associated with the proposed construction project is expected to be temporary and would not result in displacement of sea lions or harbor seals from traditional hunting areas. Further, the project location, Iliuliuk Harbor is not used as a subsistence harvest area as it is a highly industrialized harbor. Therefore, the issuance of an IHA for the proposed construction activities will not have an unmitigable adverse impact on subsistence uses and the

availability of subsistence resources will not change as a result from proposed construction activities.

## 4.2 Effects of Alternative 2– No Action Alternative

Under the No Action Alternative, NMFS would not issue an Authorization to UniSea. As a result, UniSea would not receive an exemption from the MMPA prohibitions against the take of marine mammals.

### 4.2.1 Impacts to Marine Mammal Habitat

Under the No Action Alternative, no effects on the physical environment or components of the biological environment that function as marine mammal habitat would result from UniSea's planned pile removal and installation activities, which we evaluated in the referenced documents. Even without mitigation measures, impacts to marine mammal habitat (including prey species) would be minimal and temporary because (1) the area of potential effect is limited in both space and time (e.g., short daily duration of sound associated with individual pile driving events); and (2) there are no major haulout sites in the immediate vicinity or ocean bottom structure of significant biological importance to marine mammals in the project area. Impacts to marine mammal habitat would occur from noise and minor impacts to the immediate substrate during installation and removal of piles during the project, or from temporary avoidance by prey species in the immediate area. This alternative would result in similar effects as Alternative 1 on the physical environment and components of the biological environment that function as marine mammal habitat.

### 4.2.2 Impacts to Marine Mammals

While it is difficult to provide an exact number of takes that might occur under the No Action Alternative, we would expect the number of takes to be larger than those that we expect under the Preferred Alternative, because UniSea would not be required to implement "soft start" measures designed to warn marine mammals of impending increased underwater sound levels, and additional species may be incidentally taken because UniSea would not be required to shut down construction activity if marine mammals other than Steller sea lions and harbor seals entered the project vicinity.

If the activities were to proceed without the protective measures and reporting requirements required by Alternative 1, the direct, indirect, and cumulative effects on the human or natural environment from not issuing the Authorization would include the following:

- Increases in the number of behavioral responses and frequency of changes in animal distribution, and potential takes to additional species, could occur because of the lack of mitigation measures required in the Authorization. Thus, the incidental take of marine mammals would likely occur at higher levels than we have already identified and evaluated in our *Federal Register* notice on the proposed Authorization;

- Marine mammals may be injured as a result of exposure to construction-related noise above the Level A harassment threshold, because UniSea would not be required to implement mitigation measures that require shutdown of construction activities when marine mammals enter or approach the zones at which Level A harassment is expected to occur due to construction-related noise; and

- We would not be able to obtain the monitoring and reporting data needed to assess the anticipated impact of the activity upon the species or stock, as well as increased knowledge of the species, as required under the MMPA.

#### 4.2.3 IMPACTS TO SUBSISTENCE USES

Under the No Action Alternative, we anticipate that the proposed construction project would have negligible effects on subsistence resources in the area. Even in the absence of mitigation measures, noise from pile removal and installation associated with the pier construction activities may temporarily displace marine mammals from the area but animals would be expected to return to the area following the cessation of pile removal and installation. Any displacement of sea lions or harbor seals from Iliuliuk Harbor associated with the proposed construction project would be expected to be temporary and would not result in displacement of sea lions or harbor seals from traditional hunting areas. Further, the project location, Iliuliuk Harbor is not used as a subsistence harvest area as it is a highly industrialized harbor. Therefore, no changes to availability of subsistence resources would result from the No Action Alternative.

### 4.3 COMPLIANCE WITH NECESSARY LAWS – NECESSARY FEDERAL PERMITS

NMFS determined that the issuance of an Authorization is consistent with the applicable requirements of the MMPA and ESA. Please refer to section 1.4 of this EA for more information.

### 4.4 UNAVOIDABLE ADVERSE IMPACTS

UniSea's application, our *Federal Register* notice of proposed Authorization (80 FR 79822, December 23, 2015), and other environmental analyses identified previously summarize unavoidable adverse impacts to marine mammals or the populations to which they belong or on their habitats, as well as subsistence uses of marine mammals, occurring in the proposed project area. Unavoidable adverse impacts associated with the project include short-term behavioral disturbances to marine mammals, as described page 79829 of our *Federal Register* notice of proposed Authorization (80 FR 79822, December 23, 2015). These unavoidable adverse impacts are a product of the increase in noise in Iliuliuk Harbor that would result from in-water construction, as described in Section 7, page 36, of UniSea's application (UniSea 2015a). We incorporate those documents by reference.

We acknowledge that the incidental take Authorization would potentially result in unavoidable adverse impacts. However, we do not expect that UniSea's proposed construction activities would have adverse consequences on the viability of marine mammals in Iliuliuk Harbor, on Amaknak Island, or on Unalaska Island. We do not expect the marine mammal populations in the area to experience reductions in reproduction, numbers, or distribution that might appreciably reduce their likelihood of surviving and recovering in the wild. We expect that the numbers of individuals of all species taken by harassment would be small (relative to species or stock abundances), that the proposed construction activities and the take resulting from the construction activities would have a negligible impact on the affected species or stocks of marine mammals, and that there would not be any relevant subsistence impacts.

### 4.5 CUMULATIVE EFFECTS

NEPA defines cumulative effects as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR §1508.7). Cumulative impacts can result from individually minor but collectively significant actions that take place over a period of time.

Past, present, and foreseeable impacts to marine mammal populations typically include: marine pollution; vessel traffic and vessel strikes; fishing gear entanglement; exposure to biotoxins and the resulting bioburden; acoustic masking from anthropogenic noise; and changes to prey base and habitat quality as a result of climate change. These activities and phenomena account for cumulative impacts to regional and worldwide populations of marine mammals, many of which are a small fraction of their former abundance. However, quantifying the biological costs for marine mammals within an ecological framework is a critical missing link to our assessment of cumulative impacts in the marine environment and assessing cumulative effects on marine mammals (Clark et al. 2009).

Other environmental analyses identified previously summarize the potential cumulative effects to marine mammals, the populations to which they belong, or on their habitats occurring in the action area. We incorporate those documents and analyses by reference and briefly summarize them here. Thus, this cumulative effects analysis focuses on the activities that may temporally or geographically overlap with the proposed construction activities and would most likely impact the marine mammals present in the proposed project area. We consider the impact of UniSea's presence and effects of conducting construction activities in the proposed project area to be insignificant when compared to other human activities in the area.

Development and increased ship traffic have the potential to affect the project area through a reduction of available foraging habitat and increased disturbance due to noise and vessel presence. However, the proposed project area, Iliuliuk Harbor, is highly industrialized and contains several active commercial fish processing facilities; in addition to the UniSea fish processing facility adjacent to the proposed construction site, the harbor, which is approximately 0.6 km long and 0.5 km wide, also contains 3 other active commercial fish processing facilities and a commercial shipyard (USACE 2004). As a result, the harbor experiences a high volume of marine traffic. Additionally, Dutch Harbor, located approximately 1 km north of the proposed project location on Amaknak Island, is the largest and most active commercial fishing port in the Aleutian Islands (USACE 2004) and is the largest commercial fishing port in the entire U.S. in terms of pounds landed (NMFS 2015c). As described in Richardson et al. (1995), marine mammals in developed areas are likely habituated and tolerant to a certain degree of anthropogenic disturbance, including noise. While the proposed construction project is expected to result in a temporary increase in noise in Iliuliuk Harbor, this temporary increase would not cumulatively result in significant adverse impacts to marine mammals or their habitats.

The following sections present a brief summary of the human-related activities affecting the marine mammals in the project area. Where applicable, we present an analysis of impacts to each activity attributed to the proposed dock construction project.

### 4.5.1 COASTAL DEVELOPMENT

Coastal development may result in the loss of habitat, increased vessel traffic, increased pollutants, and increased noise associated with construction and activities of the projects after construction. Several coastal development projects have occurred recently in the area of the proposed dock construction project, including the replacement and expansion of the Unalaska Marine Center dock in Dutch Harbor (north of the proposed project on Amaknak Island) in 2015, the expansion of the existing dock in Captains Bay (south of the proposed project area in Unalaska Bay) in 2015, and the construction of a small boat harbor on the southeast coast of Amaknak Island (south of the proposed project location) in 2005.

We anticipate that coastal development projects in the area will continue in the foreseeable future as the project area is already highly developed and supports one of the largest commercial fishing fleets in the U.S. We expect the proposed construction would result in a temporary increase in noise in the project area; however the proposed construction project is not likely to add an increment of disturbance that would cumulatively result in significant adverse impacts to marine mammals or their habitats. To date, the chronic noise of Iliuliuk Harbor apparently has not prevented Steller sea lions and harbor seals from using the area, as indicated by the frequent sightings of both species near seafood processing facilities within the highly industrialized harbor. Noise associated with the proposed construction project would be temporary in nature. Additionally, as the proposed dock would replace an existing commercial fishing dock in a highly developed area, the proposed project is not expected to result in loss of habitat, increased vessel traffic, or increased pollutants as a result of development.

### 4.5.2 FISHERIES INTERACTIONS

Commercial and sport fisheries are a reasonably foreseeable activity that may result in cumulative effects to Steller sea lions and harbor seals in the project area. As described above, Iliuliuk Harbor is a major commercial fishing port, while nearby Dutch Harbor is the largest commercial fishing port in the entire U.S. in terms of pounds landed (NMFS 2015c). Commercial fishing operations in the project area would continue to provide an "artificial" food source for Steller sea lions and harbor seals for the foreseeable future. These operations would continue to contribute to apparent habituation of Steller sea lions and harbor seals to food sources aboard fishing vessels. Such fisheries may also result in direct mortality or injury to Steller sea lions and harbor seals due to entanglement in fishing gear, and the association of fishing vessels with a reliable and easy source of food on the part of marine mammals may increase the likelihood of fisheries interactions among those animals.

Though marine mammals are likely affected by the cumulative actions of the fishing industry in and around the project area, the proposed project is not likely to add an incremental disturbance that would cumulatively result in significant adverse impacts to marine mammals.

### 4.5.3 VESSEL TRAFFIC

The proposed project area regularly experiences a high volume of vessel traffic as a result of the active commercial fishing industry based in Iliuliuk Harbor and nearby harbors on Amaknak Island and Unalaska Island including Dutch Harbor. This high volume of vessel traffic is a reasonably foreseeable activity that may result in cumulative effects to Steller sea lions and harbor seals in the project area. These ongoing and future uses and activities contribute to elevated background noise levels in the project area, and increased exposure of marine mammals to vessel strikes.

While marine mammals might be exposed to noise associated with vessel traffic, given the transitory nature of these vessels, any disturbance to a particular individual would be limited in space and time. No vessel traffic is directly associated with the proposed project, and the project is not anticipated to result in a cumulative increase in vessel traffic in the future, as the proposed new dock would replace an existing commercial fishing dock, and therefore would not result in a change in the amount of vessel traffic to the area. As such, there is limited potential that incremental effects associated with the proposed construction project would measurably affect marine mammals in the project area due to increased vessel traffic.

### 4.5.4 MARINE POLLUTION

Marine mammals are exposed to contaminants via the food they consume, the water in which they swim, and the air they breathe. Point and non-point source pollutants from coastal runoff, at-sea disposal of dredged materials and sewage effluent, marine debris, and potential hazardous material releases from commercial vessels and on-shore users are all persistent threats to marine mammals in the project area. Persistent organic pollutants (POPs) tend to bioaccumulate through the food chain; therefore, the chronic exposure to POPs in the environment is perhaps of the most concern to high trophic level predators such as harbor seals and Steller sea lions.

The proposed project is located in a busy commercial fishing harbor with vessel refueling facilities in adjacent Dutch Harbor. The proposed construction activities would be temporary and are not anticipated to cause increased exposure of POPs to marine mammals in the project vicinity due to the small scale and localized nature of the activities, and the fact that the project is not anticipated to result in a cumulative increase in pollutants from vessels as the proposed dock would replace an existing dock and therefore would not result in increased ship traffic to the area. Additionally, removed piles and demolished decking material would be transferred off-site for proper disposal.

### 4.5.5 CLIMATE CHANGE

Over the past 50 years, temperatures across Alaska increased by an average of 3.4°F. Winter warming was even greater, rising by an average of 6.3°F (Karl et al. 2009). The rate of warming in Alaska was twice the national average over that same period of time. Average annual temperatures in Alaska are projected to increase an additional 3.5 to 7°F by the middle of this century (Karl et al. 2009). Precipitation in Alaska has also increased slightly, but the trend is not significant. Climate projections indicate that Alaskan winters are likely to be wetter, and that summers could become drier, as rising air temperatures accelerate the rate of evaporation (ACI 2004, Karl et al. 2009).

We recognize that warming of this region could affect the prey base and habitat quality for marine mammals, however, the precise effects of climate change on the action area cannot be predicted at this time because the coastal marine ecosystem is highly variable in its spatial and temporal scales. Nonetheless, we expect that the conduct of UniSea's proposed dock construction and the issuance of an Authorization to UniSea would not result in any noticeable contributions to climate change.

### 4.5.6 SUMMARY OF CUMULATIVE EFFECTS

Coastal development, vessel traffic, fisheries interactions, marine pollution, and climate change continue to result in some level of impact to Steller sea lion and harbor seal populations in the wider Gulf of Alaska region. Nonetheless, the proposed construction activities would add another, albeit temporary, activity to the human environment of the project area. However, based on the analysis of activities presented in this section, NMFS determined that the incremental impact of an Authorization for the proposed construction project would not result in a cumulative significant impact to the environment.

NMFS believes that incremental effects of incidental harassment associated with the UniSea construction project would not be detectable in any known measure on the health, survival, or abundance of marine mammals. This is due primarily to the temporary, localized nature of project-related noise (the subject of the Authorization), the previously-developed nature of the

project area, and the extensive marine mammal mitigation and monitoring requirements of the Authorization.

## CHAPTER 5 – LIST OF PREPARERS AND AGENCIES CONSULTED

### Agencies Consulted:

Marine Mammal Commission
4340 East West Highway, Room 700
Bethesda, Maryland 20814

NMFS Alaska Regional Office
Protected Resources Division
P.O. Box 21668
Juneau, Alaska 99802

U.S. Army Corps of Engineers
Alaska District
2204 2rd St
Joint Base Elmendorf-Richardson, AK 99506

### Prepared By:

Jordan Carduner
Fisheries Biologist
Incidental Take Program
Permits and Conservation Division
Office of Protected Resources
NOAA, National Marine Fisheries Service

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